

Notice of Allowability

Application No.

09/978,382

Examiner

Ashwin Mehta

Applicant(s)

YANOFSKY ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to papers received 29 January 2004.
2. ☒ The allowed claim(s) is/are 24-26,28,29,31-33,35,41-43,45-47 and 65-71.
3. ☒ The drawings filed on 29 January 2004 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date attached.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

Drawings

1. Substitute Figures 8A-8D, submitted January 29, 2004, have been entered.
2. The rejection of claims 24-47 and 65-71 under 35 U.S.C. 112, 1st paragraph, is withdrawn, in light of Applicant's arguments.

Examiner's Amendment

3. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Matthew Hinsch on March 1, 2004.

The abstract has been amended as follows:

The present invention provides methods of enhancing [selectively controlling] lignin biosynthesis in plants [such that lignification is reduced or enhanced, as desired]. The invention provides, for example, a method of enhancing [reducing] lignification in a vascular plant by ectopically expressing a nucleic acid molecule encoding an AGL1-like gene product, or an AGL1-like gene product and an AGL5-like [AGL8-like] gene product in the plant[, whereby lignification is reduced due to ectopic expression of the nucleic acid molecule. An AGL8-like

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gene product useful in the invention can have, for example, substantially the amino acid sequence of an AGL8 ortholog such as Arabidopsis AGL8 (SEQ ID NO:2)].

The title has been amended as follows:

ENHANCING [SELECTIVE CONTROL OF] LIGNIN BIOSYNTHESIS IN
TRANSGENIC PLANTS

In the specification:

The paragraph on page 11, lines 16-21, has been amended as follows:

--Figure 8 (A-D) shows the nucleotide sequence (SEQ ID NO: 24) and amino acid (SEQ ID NO: 25) of Arabidopsis R-like basic helix-loop-helix transcription factor (R-like bHLH). The nucleotide sequence SEQ ID NO:24 includes sufficient promoter sequence to give valve margin specific expression.--

4. The following is an examiner's statement of reasons for allowance: Applicants have developed a method for enhancing lignification in a transgenic vascular plant. The method comprises introducing into the plant, and expressing, nucleic acid molecules encoding AGL1, or AGL1 and AGL5. The specification teaches that transgenic plants transformed with and expressing SEQ ID NO: 3 (which encodes AGL1), or SEQ ID NO: 3 and SEQ ID NO: 5 (which encodes AGL5), showed increased lignification in the valve mesophyll layers of fruit. The declaration submitted January 29, 2004 indicates that transgenic plants comprising a 35S::IND1 construct showed increased lignification in cells of the stem. Applicants' remarks in the paper

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filed January 29, 2004 also cite a publication published in 2000 for demonstrating that endogenous IND1 expression does not occur unless AGL1 and AGL5 are present (response, page 8, 1st full paragraph). This article was published after the priority date of the instant application, and cannot be used as support for teachings of the specification. However, the instant specification also teaches that expression of R-like bHLH (which is the same as IND1) is positively regulated by AGL1 and AGL5, indicating that increased expression of AGL1, AGL5, and R-like bHLH are involved in enhancing lignin biosynthesis. The prior art does not teach or fairly suggest that AGL1 or AGL5 are involved in the biosynthesis of lignin in plants.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ashwin Mehta whose telephone number is 571-272-0803. The examiner can normally be reached from 8:00 A.M to 5:30 P.M. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amy Nelson, can be reached at 571-272-0804. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306 for regular communications and 703-872-9307 for After Final communications. Information regarding the status of an application may be obtained from

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the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

March 1, 2004

A handwritten signature in black ink, appearing to read 'Ashwin D. Mehta', with a stylized flourish at the end.

Ashwin D. Mehta, Ph.D.
Primary Examiner
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